

REMARKS

Claims 1-4 and 6-7 are pending in the present application.

I. FORMAL MATTERS

A. Priority Documents

Applicant notes with appreciation that the Office Action acknowledges the claim to foreign priority under 35 U.S.C. § 119(a)-(d) or (f) and indicates that the certified copies of the priority documents have been received.

B. Information Disclosure Statements

The Office Action does not includes a copy of the PTO Form 1449's that were submitted with the Information Disclosure Statements filed on August 5, 2003 and October 11, 2005. Applicant respectfully requests the Examiner to do so with each reference listed therein initialed by the Examiner, thereby indicating that these references were considered and should be listed on the face of any patent that issues from the present application.

C. Drawings

The Office Action indicate that the drawings are objected to because the feature “a radius of said axis of said auxiliary roller near the center of said axis in its axial direction is larger than a radius of said axis of said auxiliary roller at it other part in its axial direction” is allegedly not shown in the drawings. Applicant submits that this feature, which is recited in claim 6, is shown in Fig. 7 as 68a and 68b (i.e., $68a > 68b$).

The Examiner also asserts that reference characters 71 and are not shown in the drawings. Applicant respectfully submits that reference character 71 is shown in Fig. 1. Regarding reference character 690, Applicant has amended page 9 of the specification, as presented above, to change reference character “690” to “680,” which is clearly shown in Fig. 5.

The drawings also are objected to because the reference character 942 is used to designate two components. Applicant has amended Fig. 5 herein to amend reference character “942” to “924.” Also, although not mentioned by the Examiner, Applicant has amended Fig. 5 herein to amend reference character “940” to “640.”

D. Specification

The Examiner has objected to the specification for minor informalities. This objection is believed to be overcome by the above-presented amendments to the specification.

II. REJECTION UNDER 35 U.S.C. 112, SECOND PARAGRAPH

Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being allegedly indefinite. Except as presented below, Applicant submits that this rejection is overcome by the amendments to the claims presented herein.

Regarding claim 5, Applicant submits that claim 5 as presented is sufficiently clear, as explained below. As shown in Fig. 3 of the present invention, if a distance between the centers of axes of the auxiliary roller 68 and the toothed driving pulley 64 are marked as "L," a radius of the auxiliary roller 68 is referred as "R," a radius of the toothed driving pulley 64 which is determined to be a distance from the center of the axis 62 to a top end of a tooth 640 of the pulley is marked as "r," the thickness of the toothed belt 66 (a distance from the second surface to a top end of a tooth 664 of the toothed belt 66) is "t," a height of engagement of the tooth 640 of the driving pulley 64 and the tooth 664 of the toothed belt 66 is "e," the relationship of these length is expressed by the following equation:

$$R + r + t - e = L$$

Therefore, in the positional relationship shown in Fig. 3, the distance between the center axes of the toothed driving pulley 64 and the auxiliary roller 68 "L" is shorter than the sum of the radius of the auxiliary roller 68 "R," the radius of the driving pulley "r" and the thickness of the toothed belt 66 "t" by the height of engagement of the tooth 640 of the driving pulley 64 and the tooth 664 of the toothed belt 66 "e."

Accordingly, Applicant submits that the rejection of claims 1-7 under 35 U.S.C. § 112, second paragraph, is overcome, and Applicant respectfully requests that this rejection be withdrawn.

III. PRIOR ART REJECTION

Claims 1-4 and 7 are rejected under 35 U.S.C. § 102(b) as being unpatentable over JP 2001-063866 (Nakagaki) in view of U.S. Patent No. 5,991,575 (Okiyama). This rejection is traversed.

Claim 1 has been amended herein to include the limitations of claim 5. As presented above with respect to the rejection of claim 5 under 35 U.S.C. § 112, second paragraph, in the positional relationship described in claim 1, the distance between the center axes of the toothed driving pulley 64 and the auxiliary roller 68 "L" is shorter than the sum of the radius of the auxiliary roller 68 "R," the radius of the driving pulley "r" and the thickness of the toothed belt 66 "t" by the height of engagement of the tooth 640 of the driving pulley 64 and the tooth 664 of the toothed belt 66 "e."

According to this structure, the tooth 664 of the toothed belt 66 which passes through the gap defined between the driving pulley and the auxiliary roller 68 constantly engages the tooth 640 of the driving pulley 64. Therefore, it is possible to prevent the toothed belt 66 from slipping off from the toothed driving pulley 64. In

contrast, in Nakagaki, as shown in Fig. 2, the positional relationship is expressed by the following equation:

$$R + r + T - e < L$$

According to this positional relationship, the tooth of the toothed belt does not engage with the tooth of the driving pulley. Okiyama fails to make up for this deficiency of Nakagaki.

Claims 2-4 and 7 include this limitation of claim by virtue of their dependence thereon. Therefore, the combination of Nakagaki and Okiyama fails to form the invention defined by claims 1-4 and 7. Thus, the rejection of claims 1-4 and 7 under 35 U.S.C. § 103(a) is overcome and should be withdrawn.

Based on the foregoing, Applicant submits that the present application is in condition for allowance and allowance is respectfully solicited. If the Examiner believes that any of the outstanding issues could be resolved by a telephone conference, Applicant respectfully requests the Examiner to contact the undersigned at the telephone number listed below.


Applicant believes that no additional fees are due for the subject application. However, if for any reason a fee is required, a fee paid is inadequate or credit is owed

for any excess fee paid, you are hereby authorized and requested to charge Deposit

Account No. 04-1105.

Respectfully submitted,

Date: 10/18/05
Customer No.: 21874



John J. Penny, Jr.
Reg. No. 36,984
Intellectual Property Practice Group of
EDWARDS & ANGELL, LLP
P. O. Box 55874
Boston, MA 02205
Tel: (617) 517-5549
Fax: (617) 439-4170